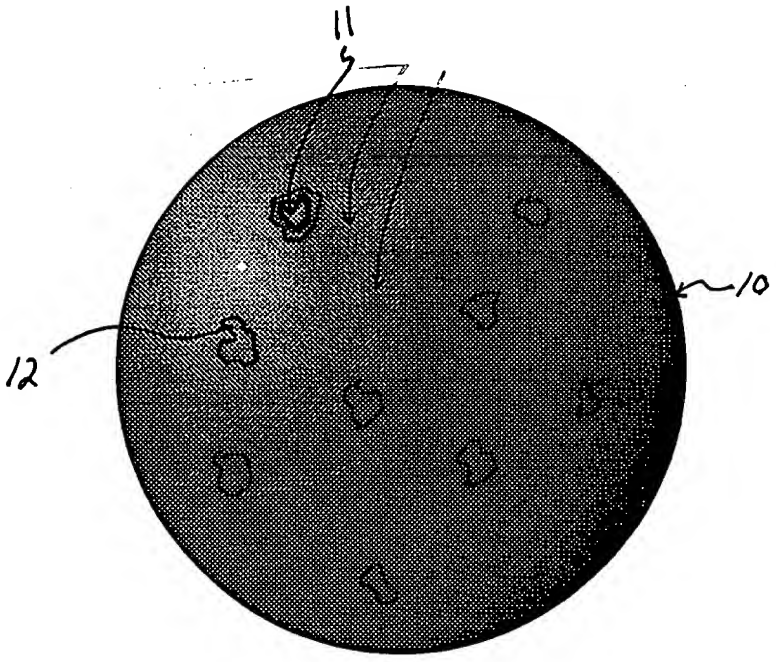


Fig. 1

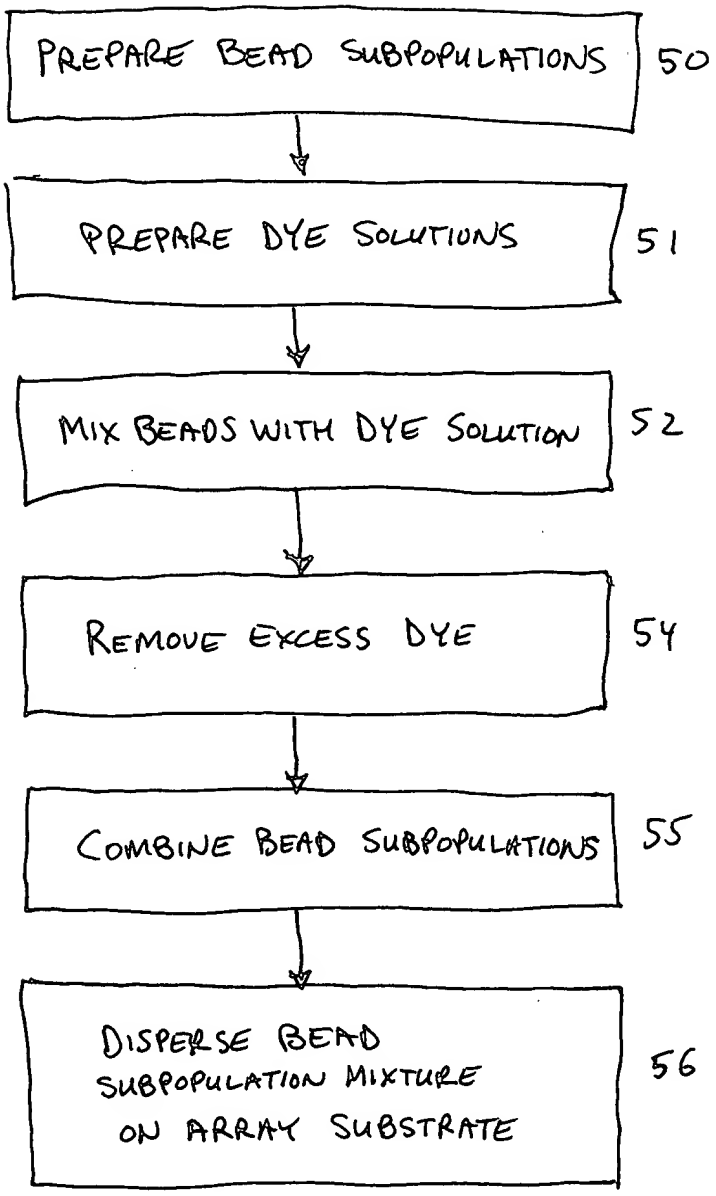

PREPARE BEAD SUBPOPULATIONS
50
PREPARE DYE SOLUTIONS
51
MIX BEADS WITH DYE SOLUTION
52
REMOVE EXCESS DYE
54
COMBINE BEAD SUBPOPULATIONS
55
DISPERSE BEAD SUBPOPULATION MIXTURE ON ARRAY SUBSTRATE
56

Fig. 2

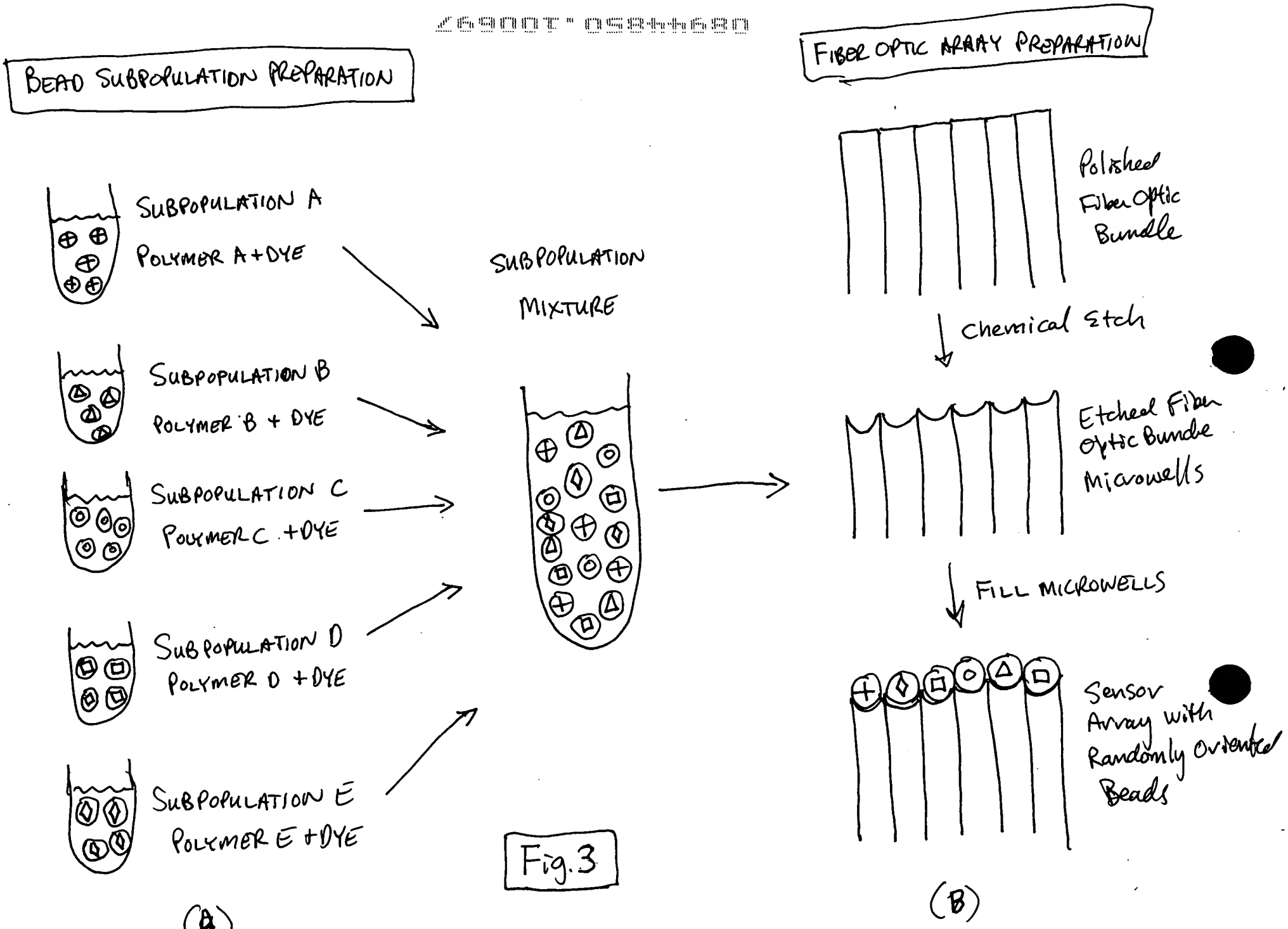


Fig. 3

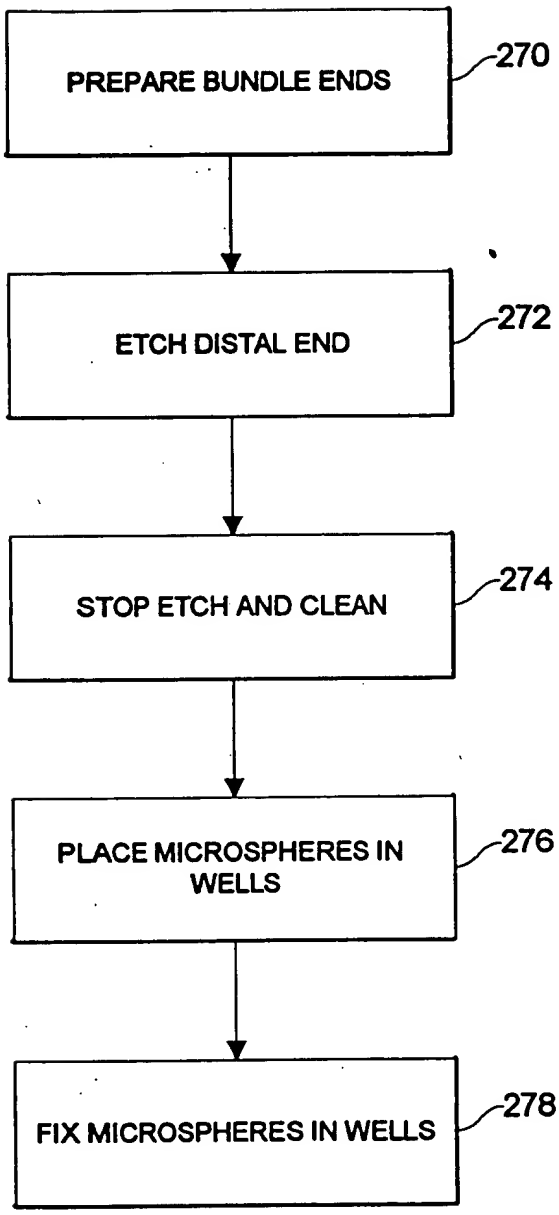

PREPARE BUNDLE ENDS
270
ETCH DISTAL END
272
STOP ETCH AND CLEAN
274
PLACE MICROSPHERES IN WELLS
276
FIX MICROSPHERES IN WELLS
278

Fig. 4

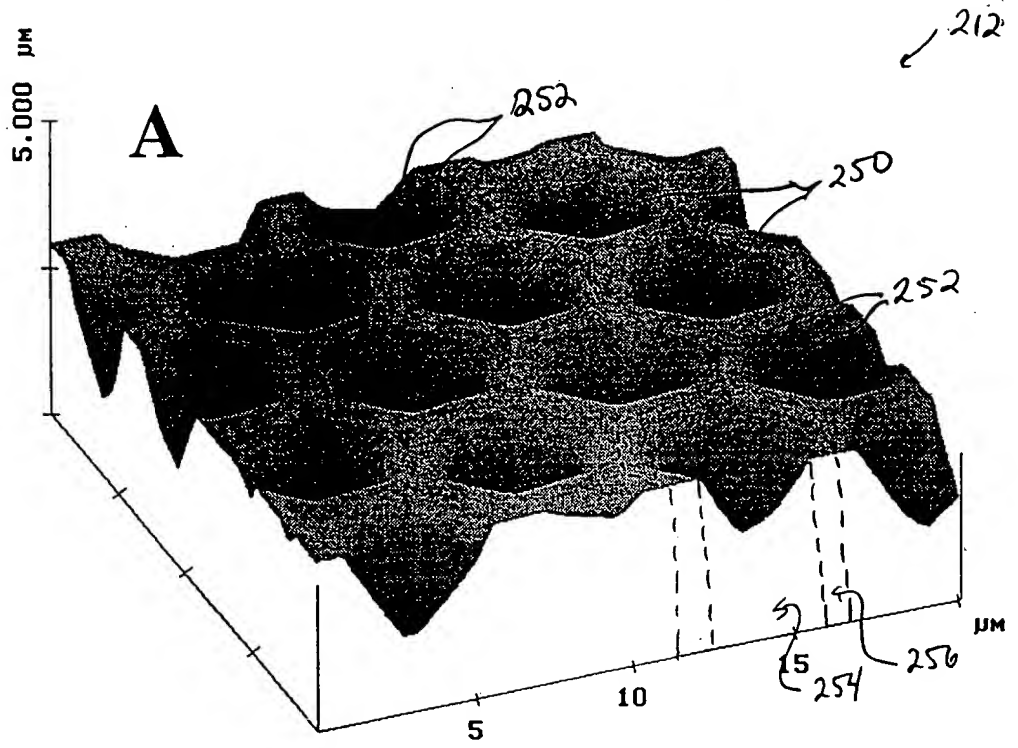


Fig. 5A

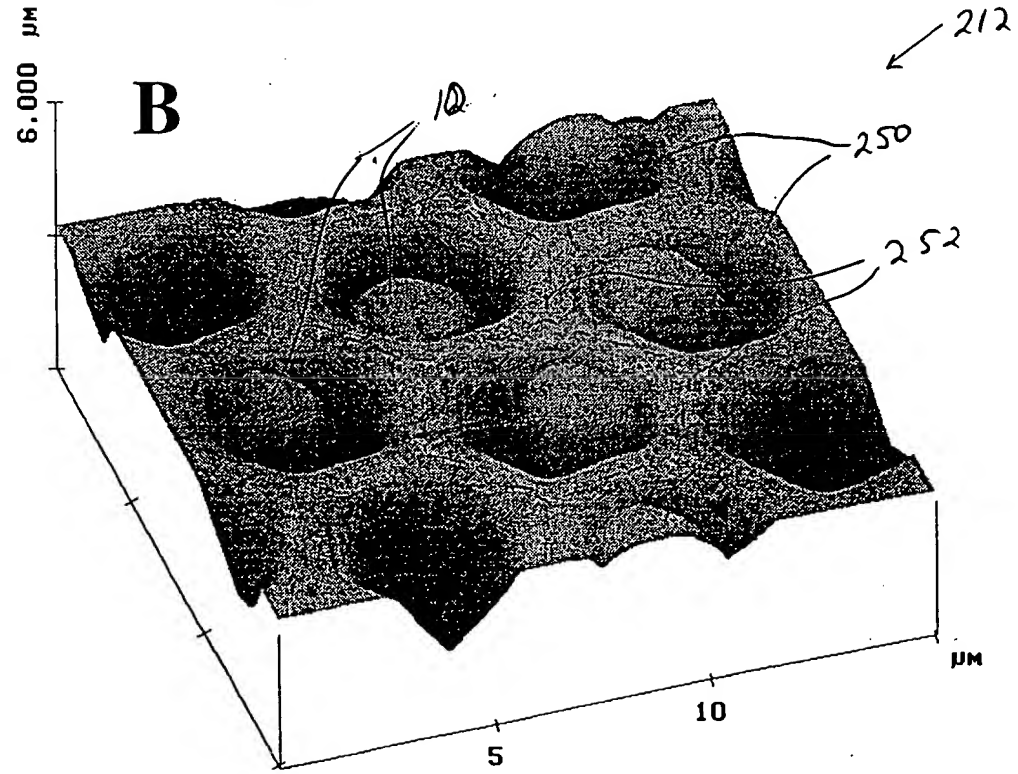
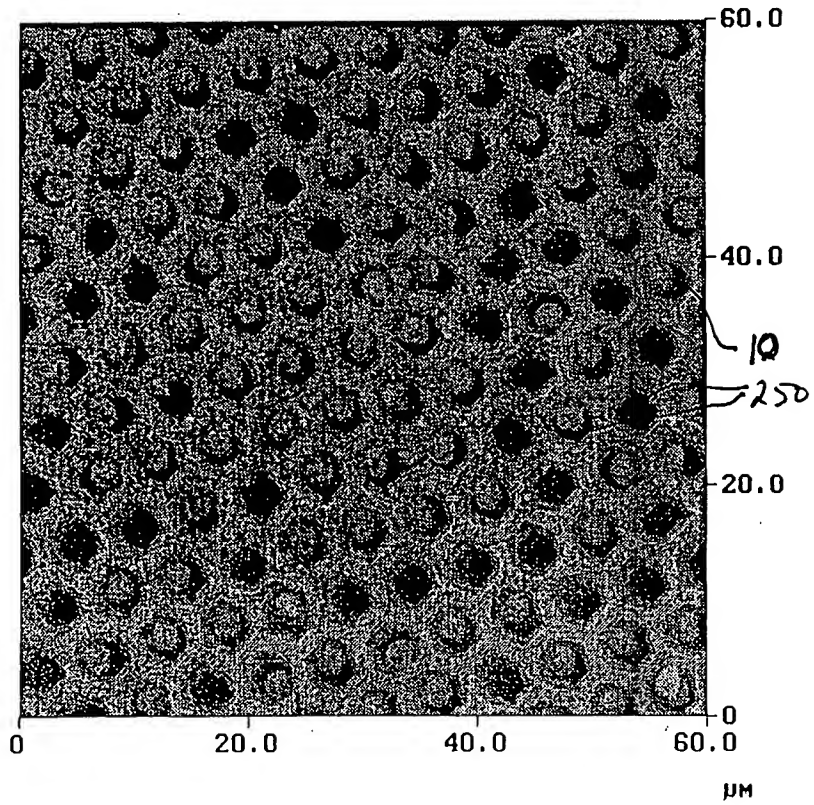


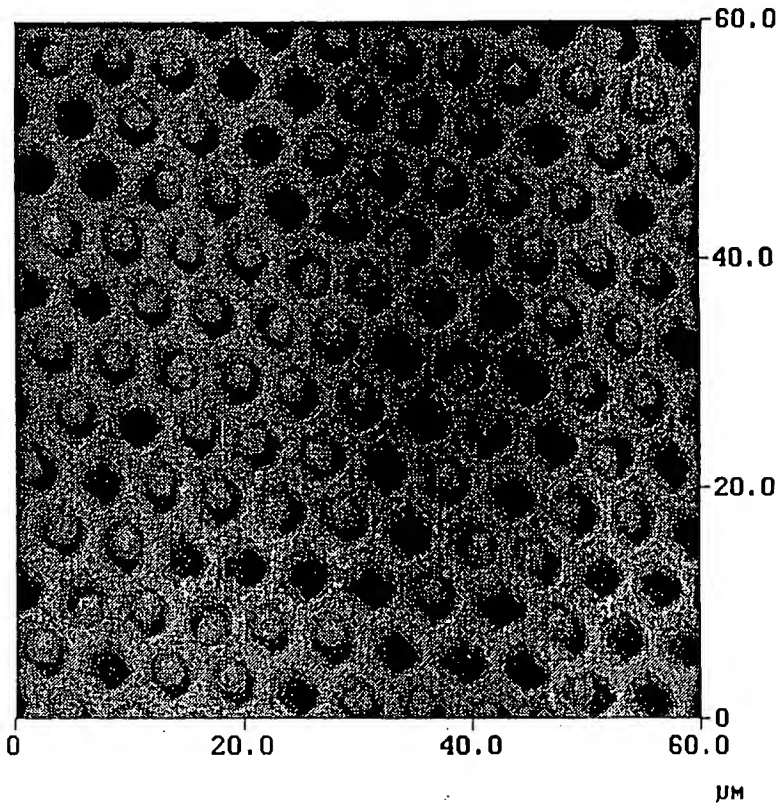
Fig 5B

Polymer Coated Beads in Wells After Air Pulse and Tapping



Before Tapping

Fig. 6A



After Tapping

Fig. 6B

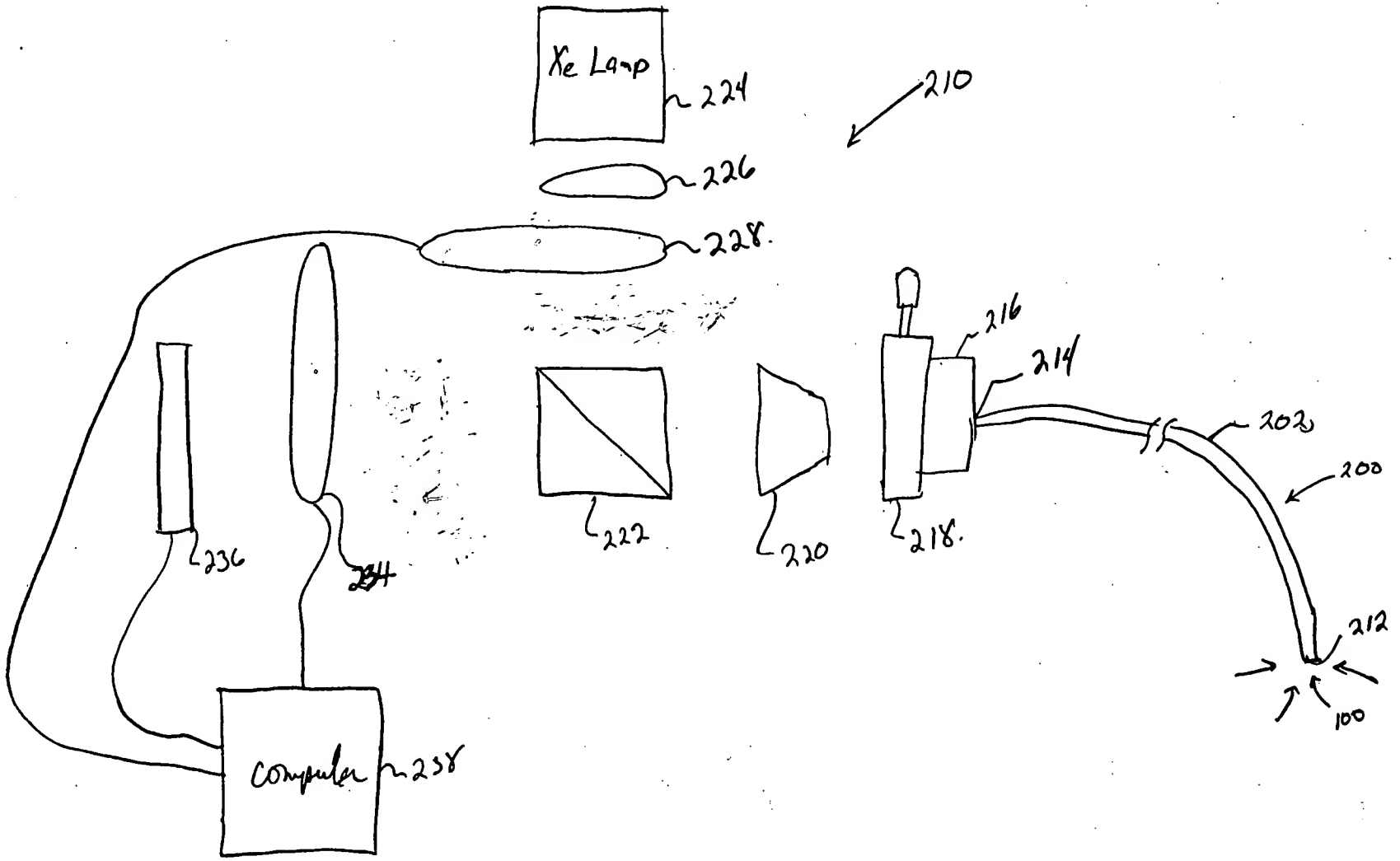

Xe Lamp
224
210
226
228
216
214
202
200
236
234
222
220
218
212
100
computer
238

Fig. 7

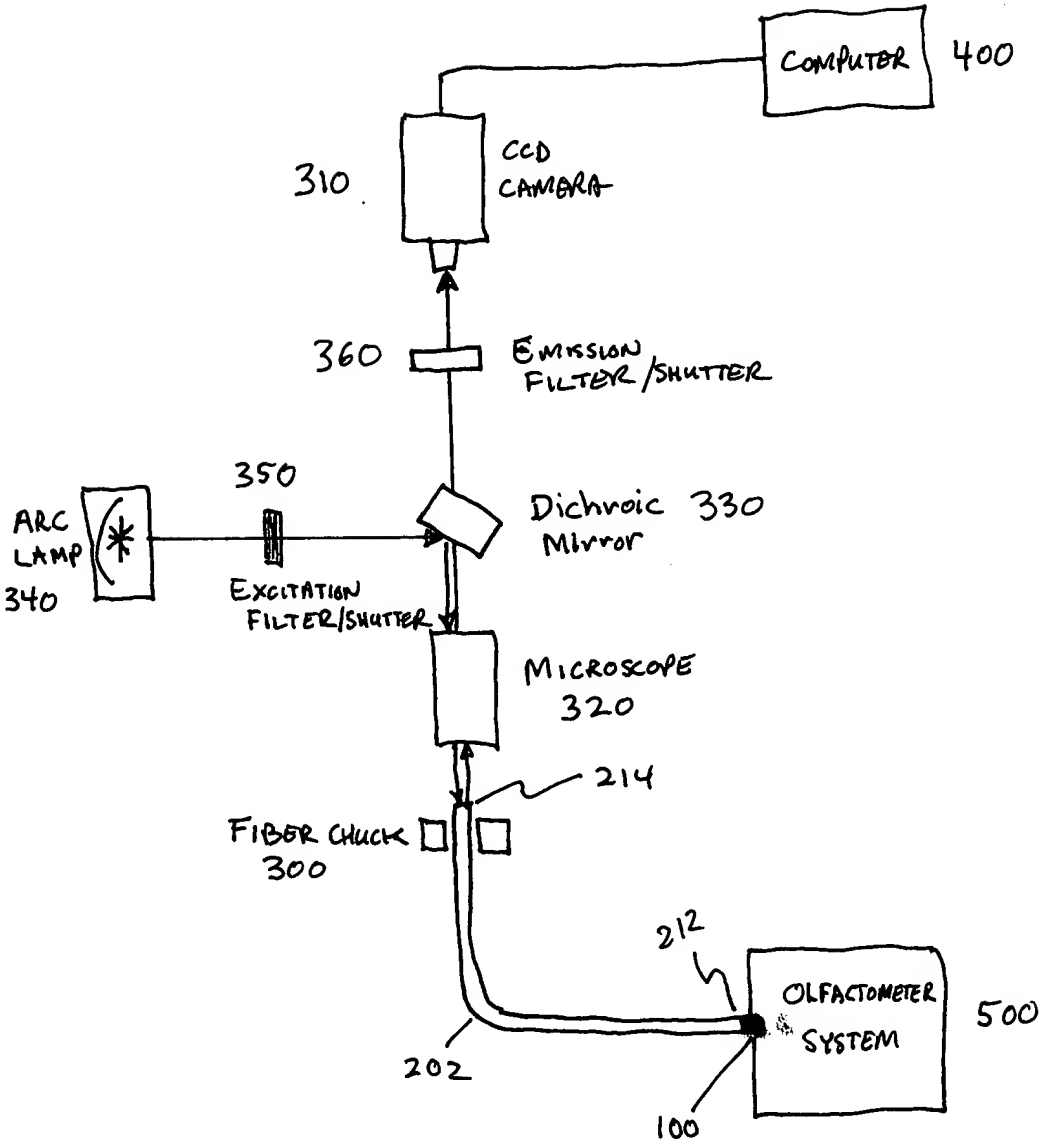

COMPUTER
400
310
CCD CAMERA
360
EMISSION FILTER/SHUTTER
350
ARC LAMP
340
EXCITATION FILTER/SHUTTER
Dichroic Mirror
330
MICROSCOPE
320
214
FIBER CHUCK
300
212
OLFACTOMETER SYSTEM
500
202
100

Fig. 8

Fig. 9

Porous 3µm silica beads high-speed response to Saturated Toluene

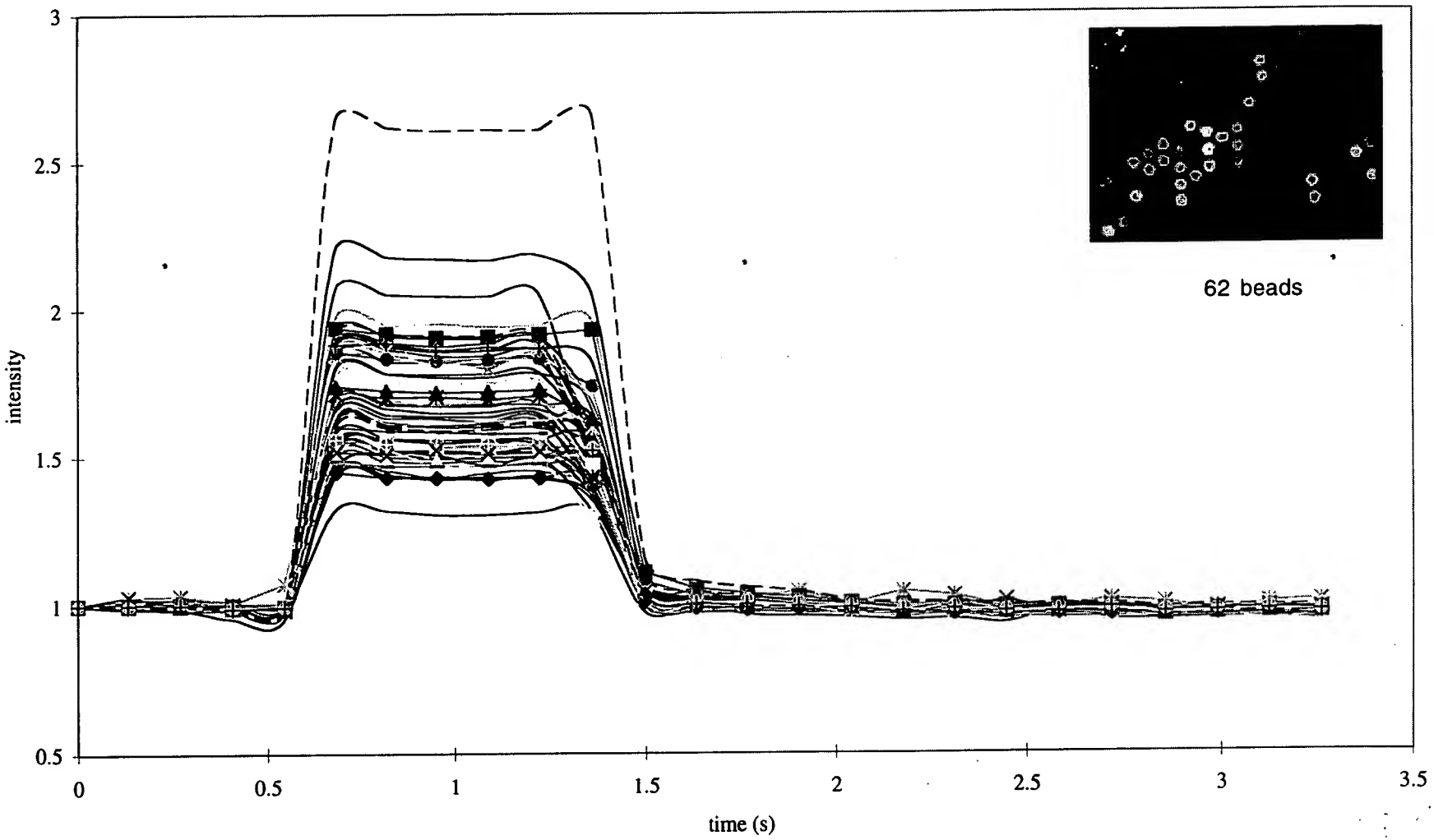


Fig. 10

PMS Beads in Fiber: Response to Methanol (sat)

39 beads, mid-fiber region: centroid ovals, standardized responses

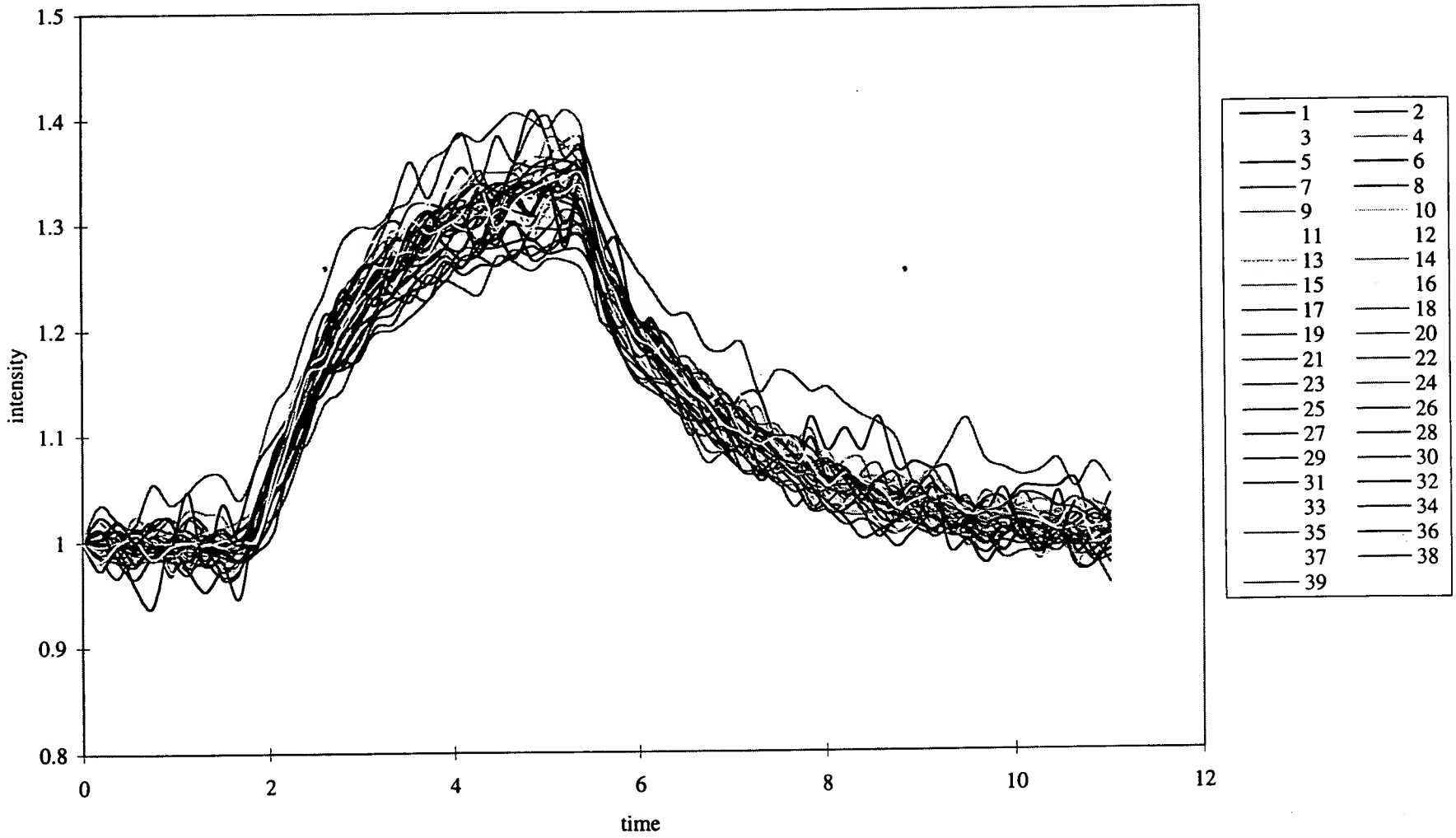


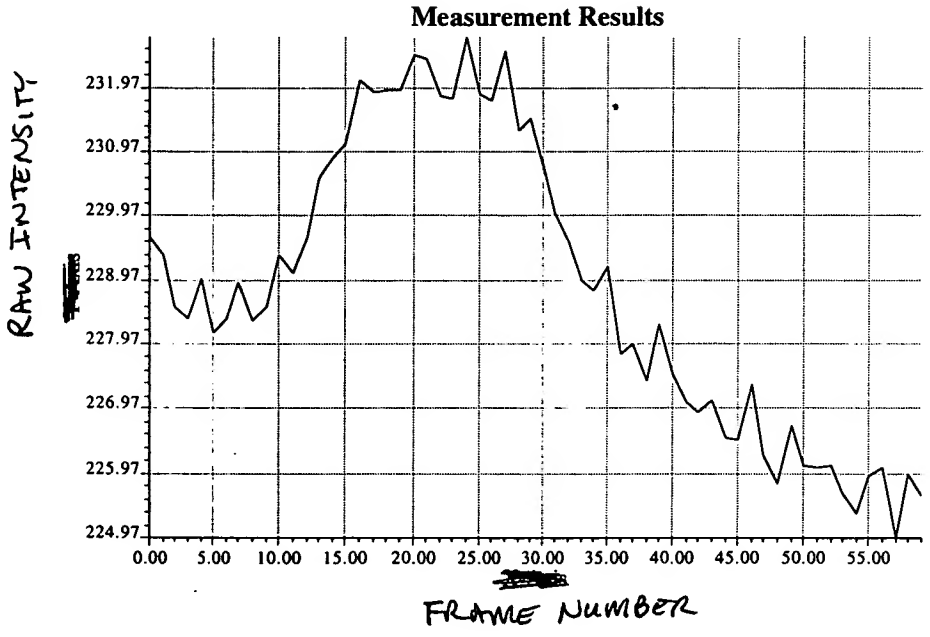
Fig. 11A/11B

PS802 648.c Beads

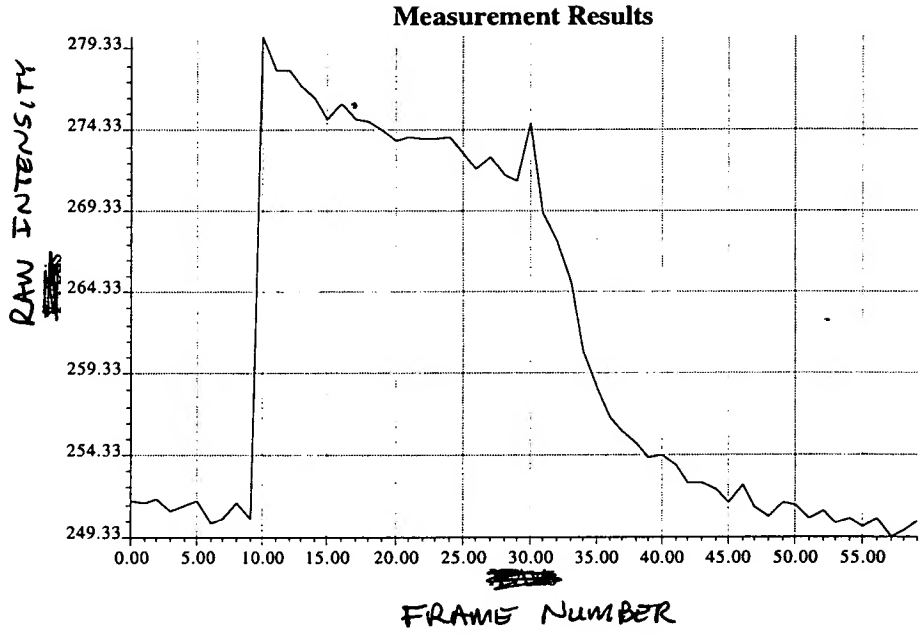
bead 1

Saturated Toluene

Saturated Methanol



(A)



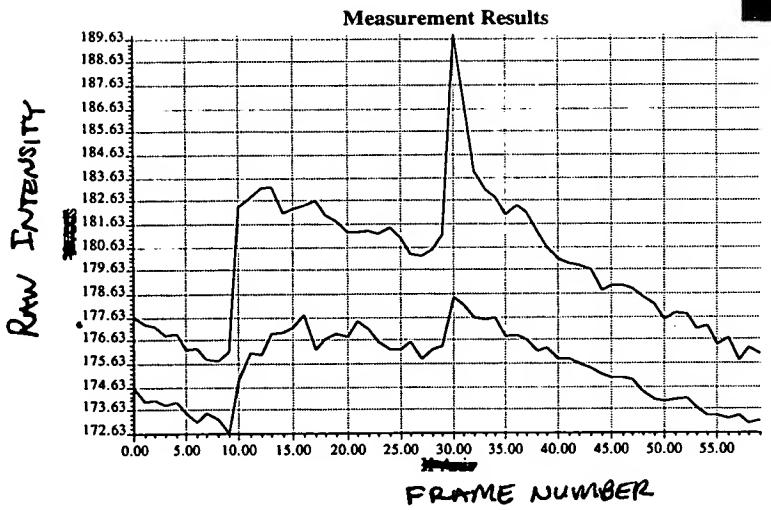
(B)

Fig. 12A/12B

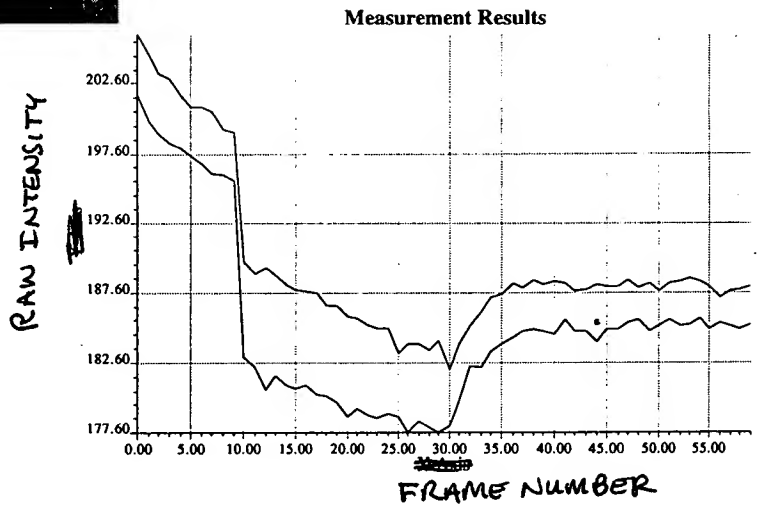
PDPO/psil 9/11

tol

met



(A)



(B)

Fig. 13

Porous 3µm silica beads response to Ethyl Acetate

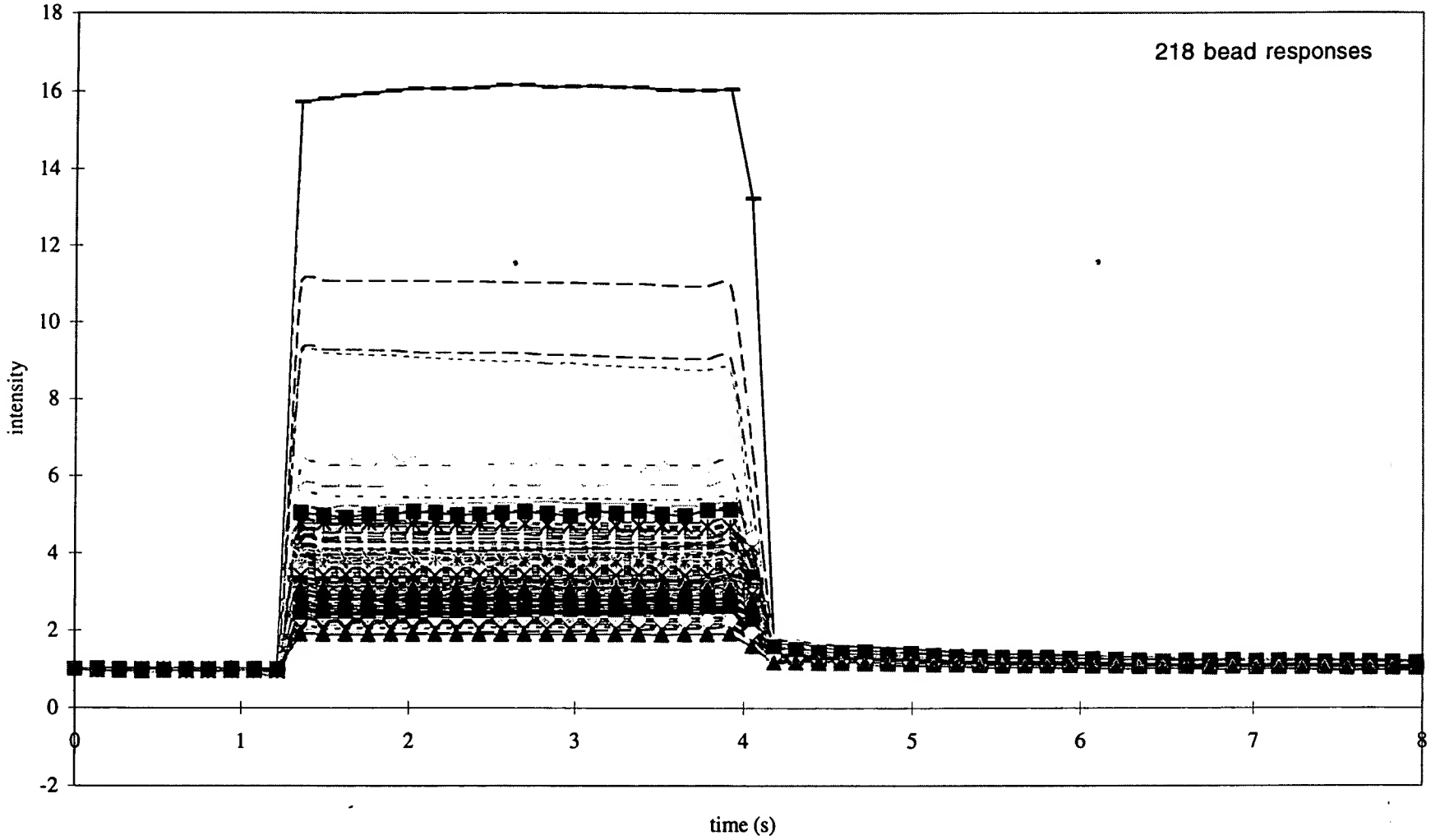
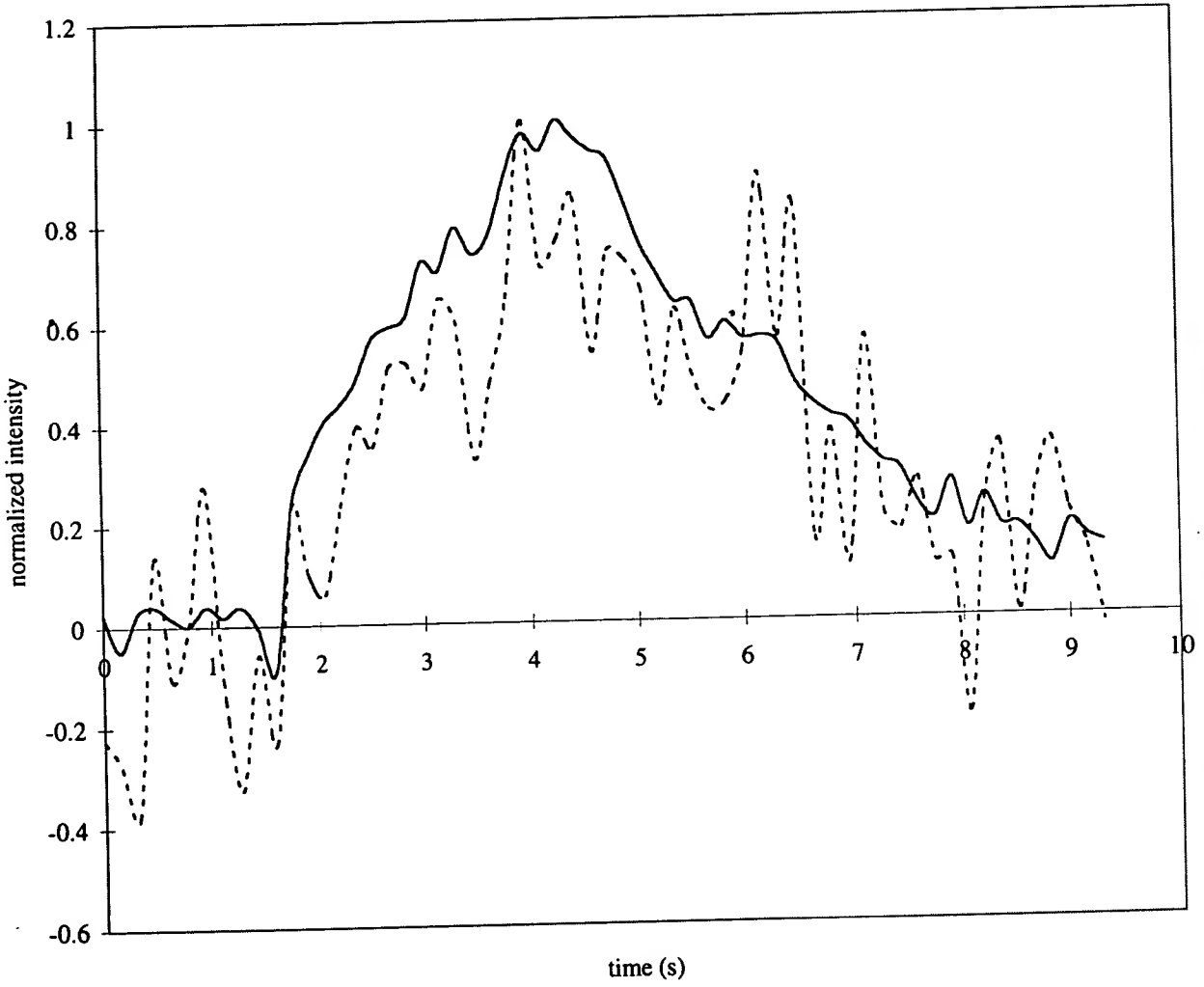


Fig. 14

Normalized signal-to-noise comparison between bead #1 and summed responses of 39 beads



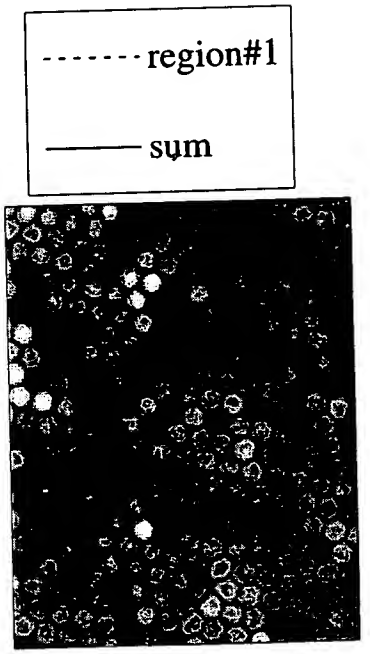
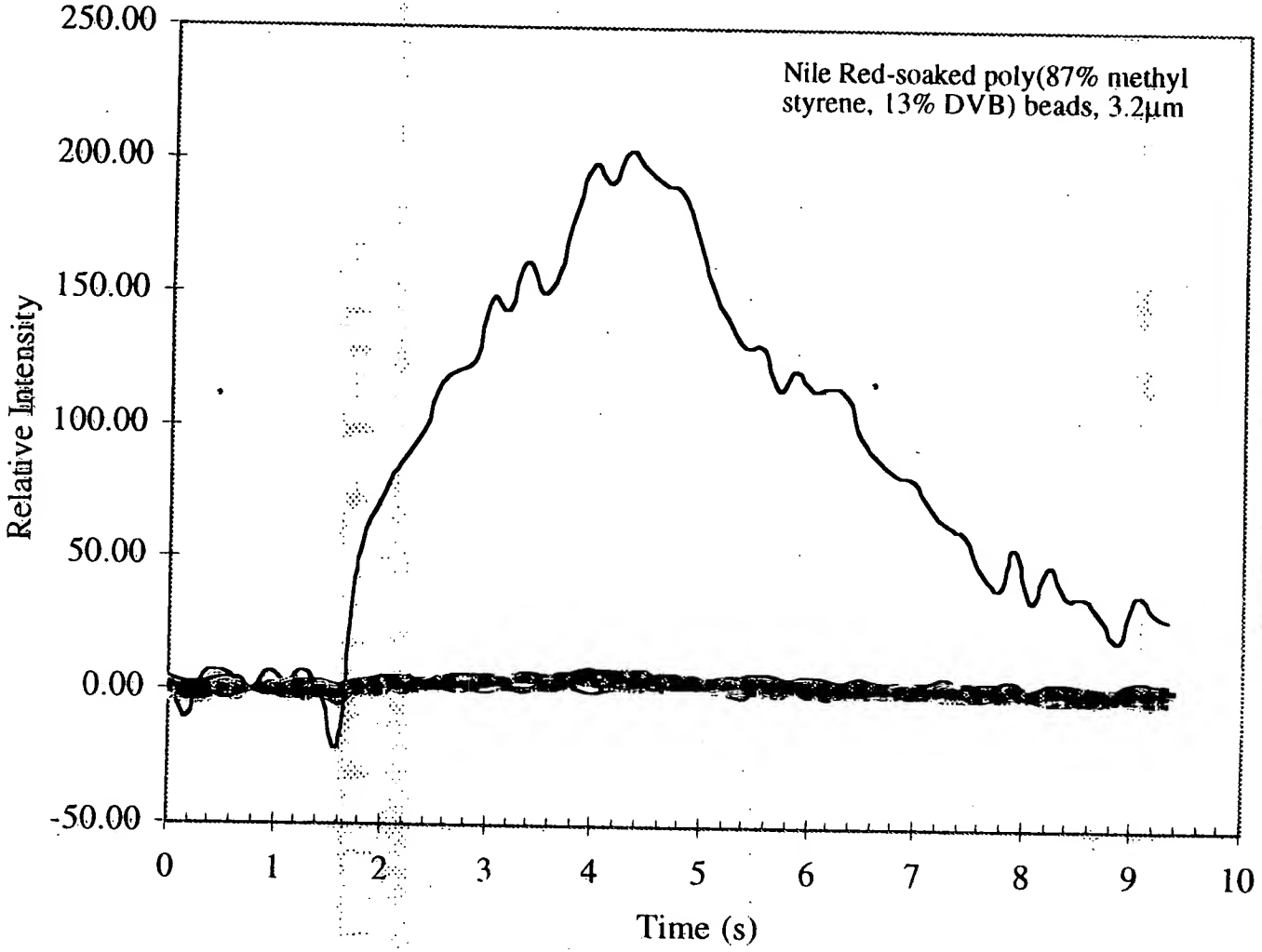


Fig. 15

Signal Enhancement Through Multi-bead Response Summing

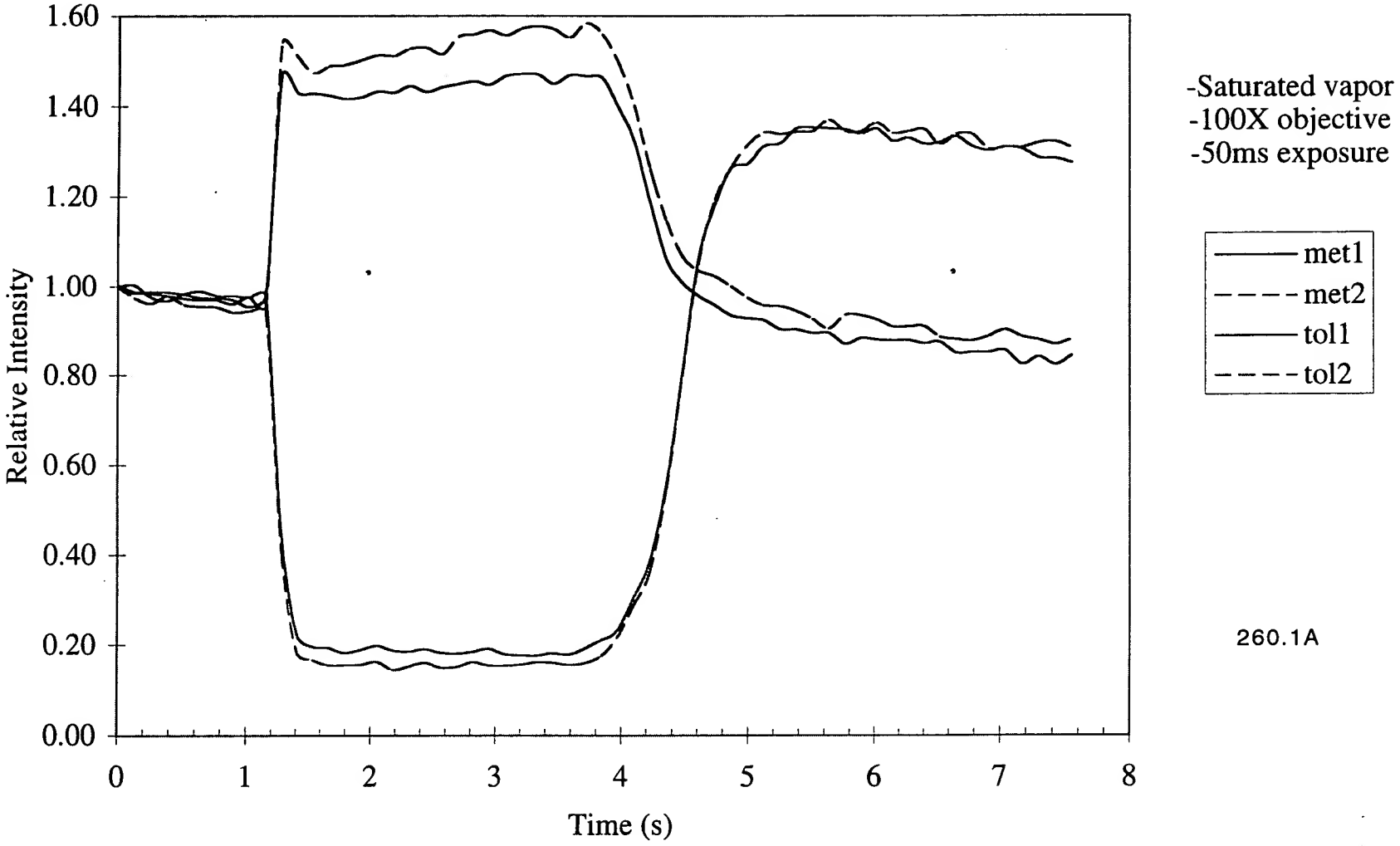


bright = wells with beads
dark = empty wells

Fig. 16

"Thick-layer" PS802/Silica 3.2μm Beads

Region 2



Self-Encoding Array with Two Bead Types in Image Guide Wells

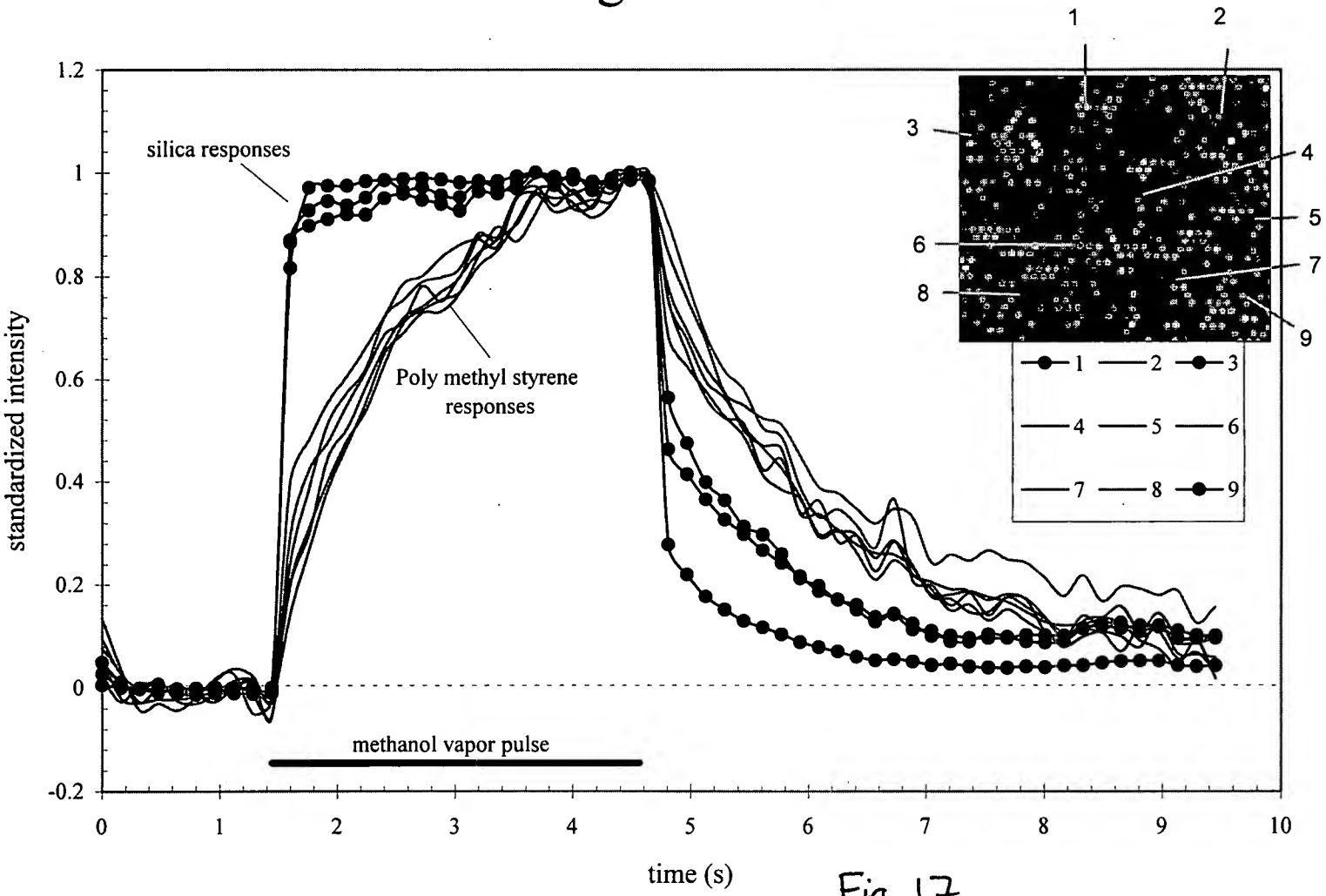


Fig. 17

Self-Encoding Array with Two Bead Types in Image Guide Wells

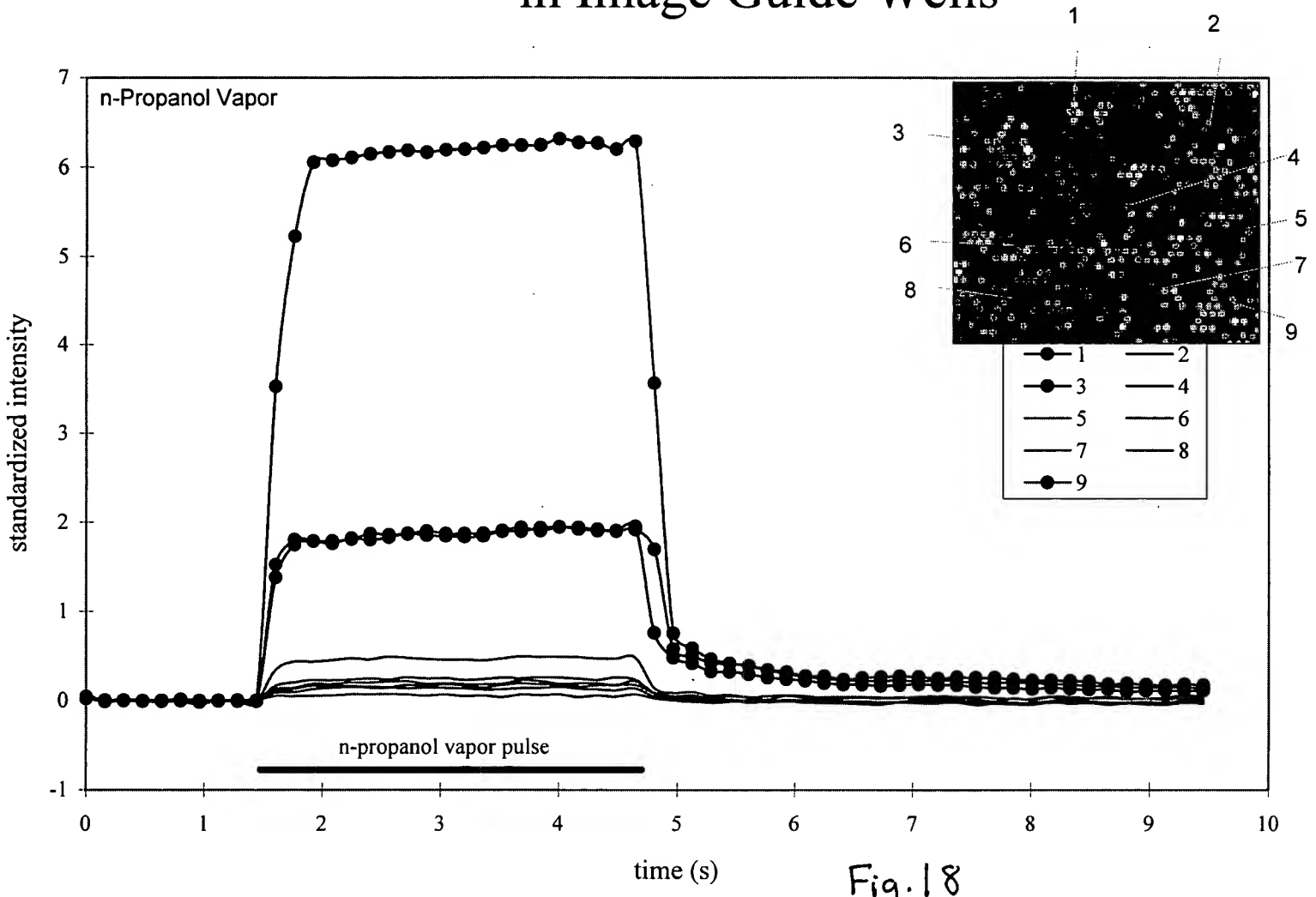


Fig. 18

Self-Encoding Array with Two Bead Types in Image Guide Wells

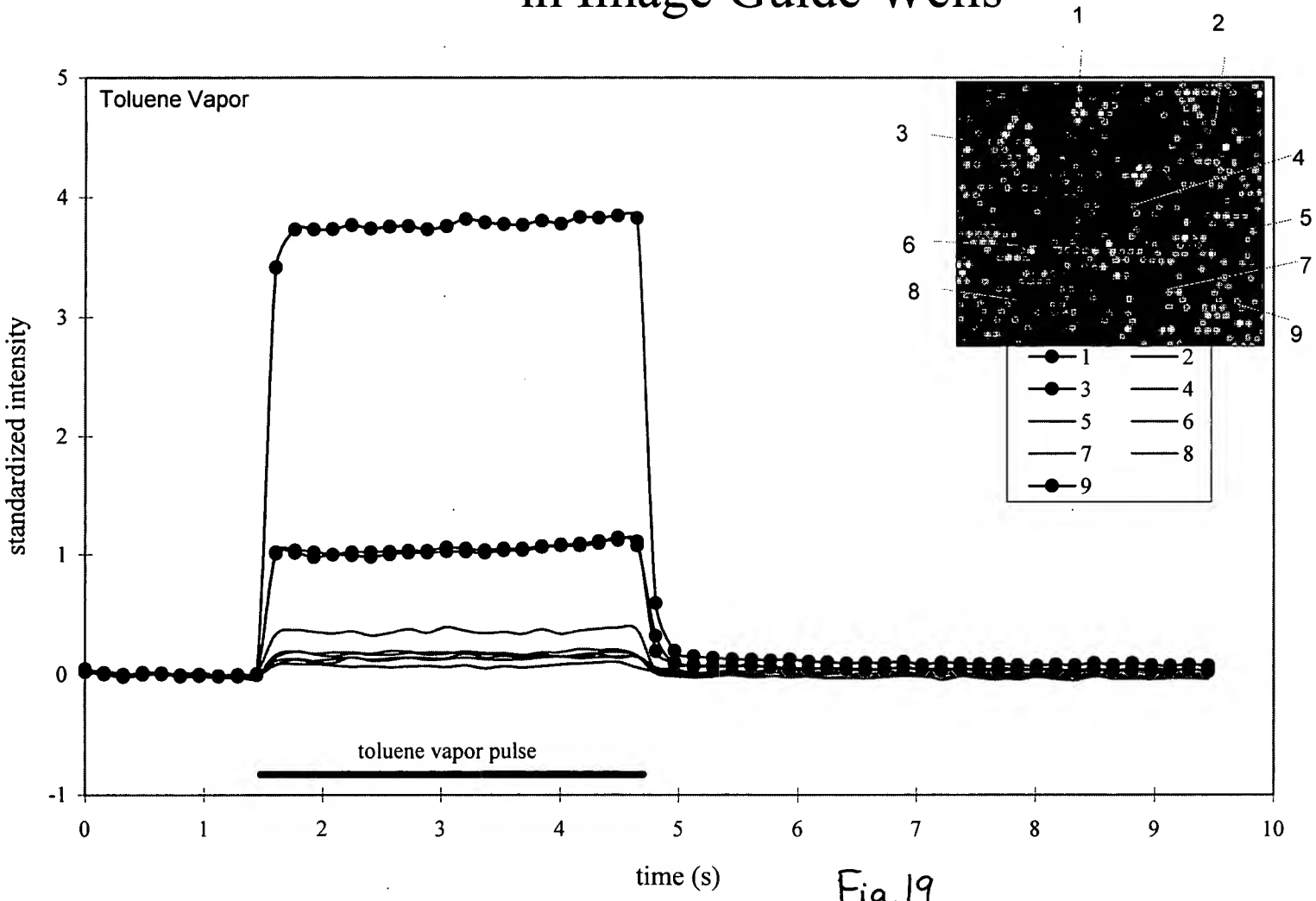
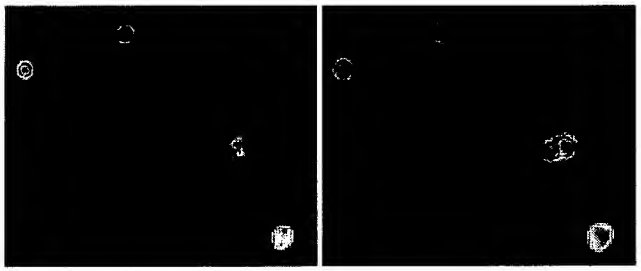


Fig. 19

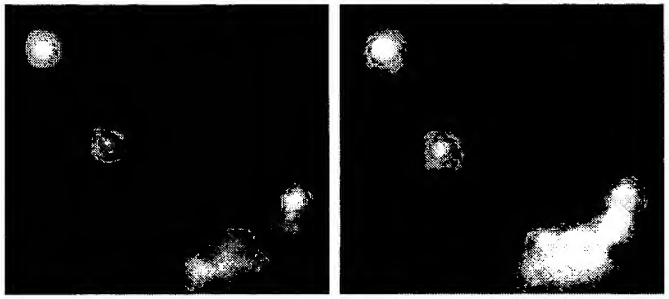
Swelling of three different bead types in presence of saturated toluene vapor

PS802 648.c



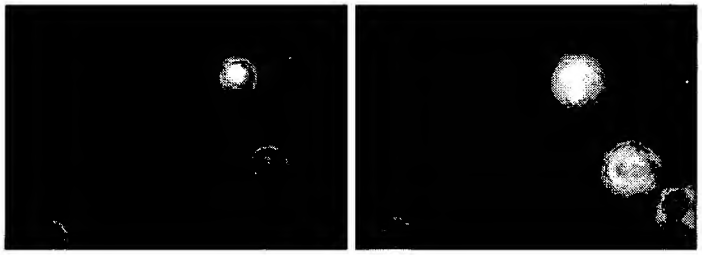
air toluene

Poly methyl styrene/
2% divinyl benzene



air toluene

Poly methyl styrene



air toluene

Fig. 20